

FIGURE 1

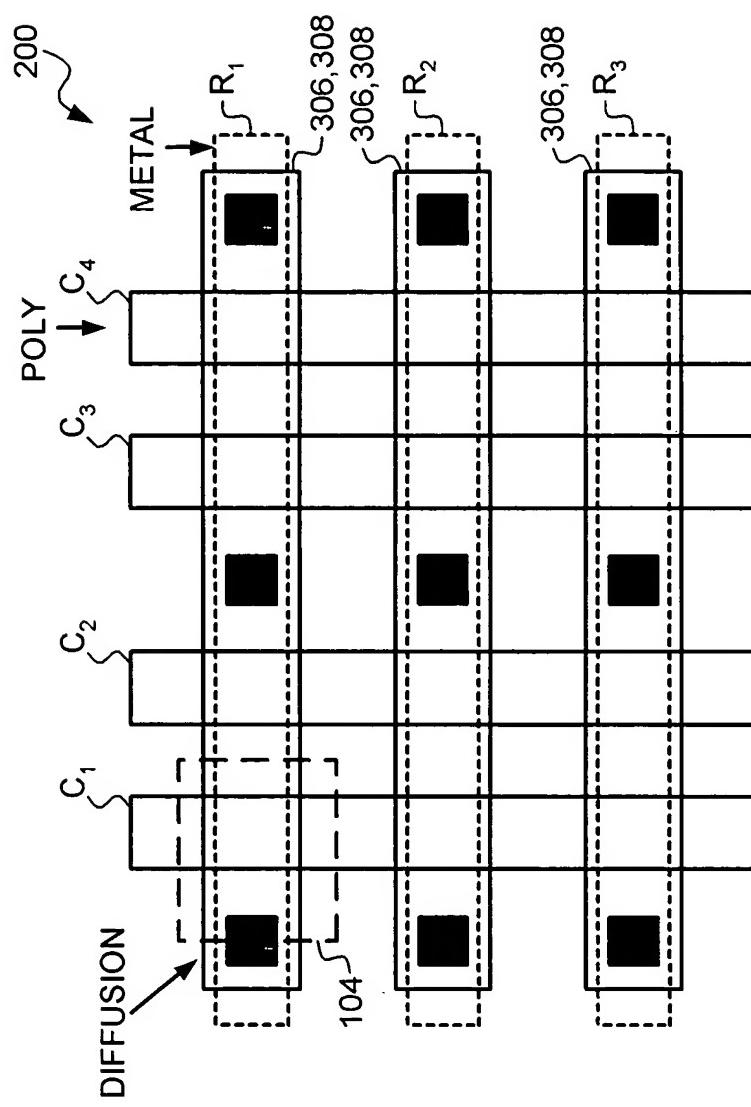


FIGURE 2

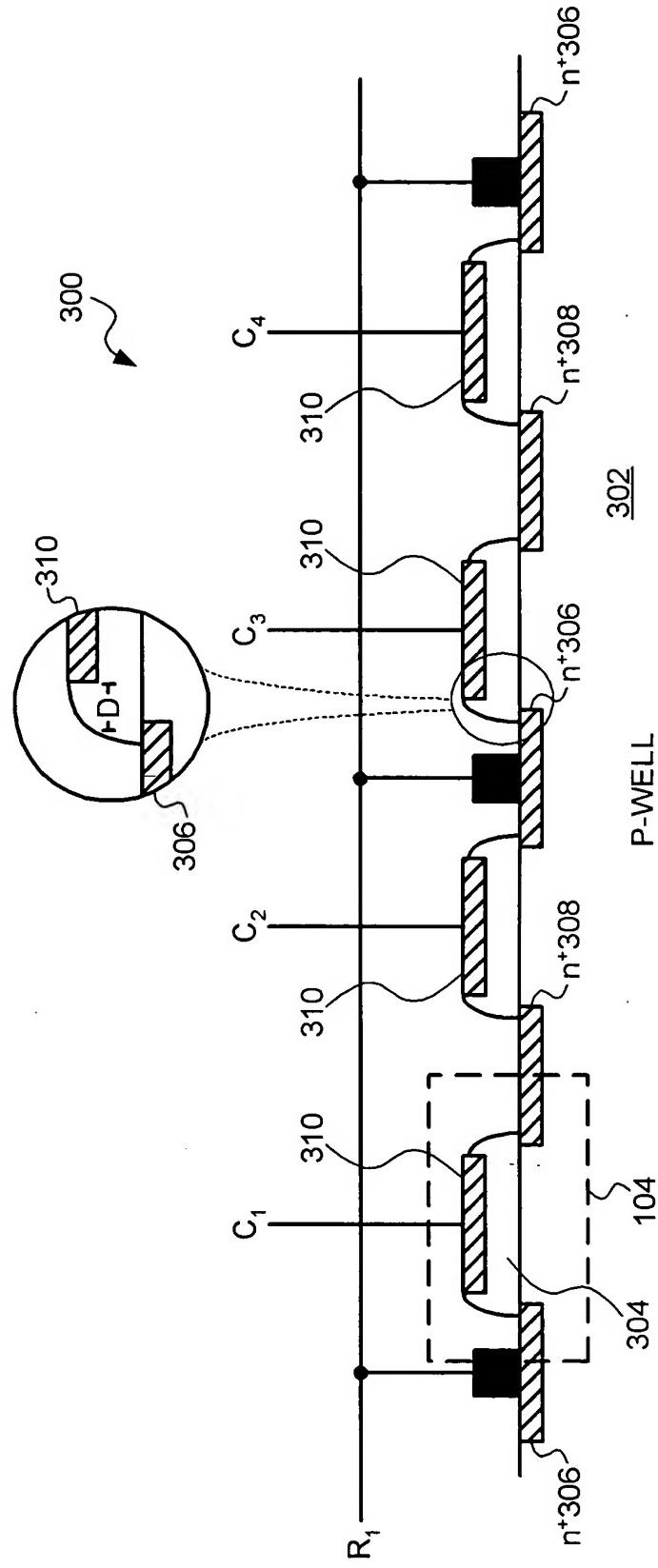


FIGURE 3

PROGRAM	VBL (V)	VWL (V)	PROGRAM
SC/SR	8	0	401
SC/UR	8	8	403
UC/SR	3.3	0	405
UC/UR	3.3	8	407
			ISENSE
READ	1.8	0	409
SC/SR	1.8	1.8	411
SC/UR	0	0	413
UC/UR	0	1.8	415

FIGURE 4

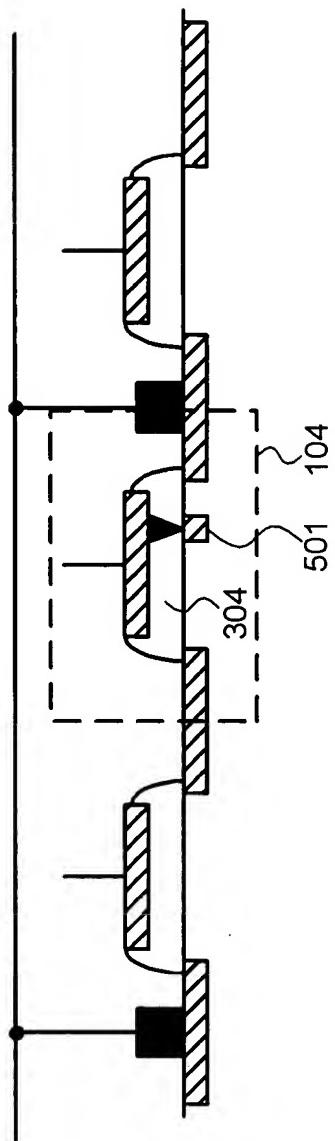


FIGURE 5

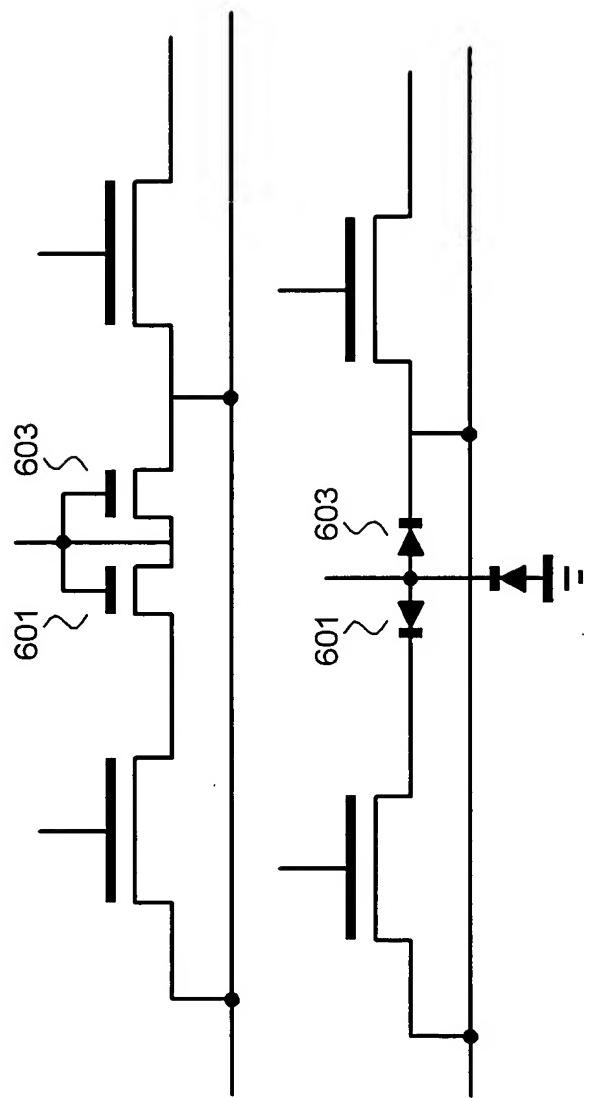
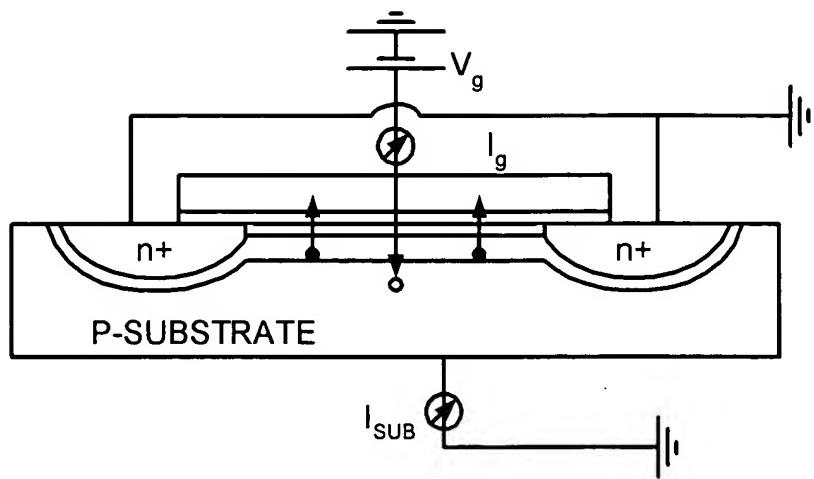
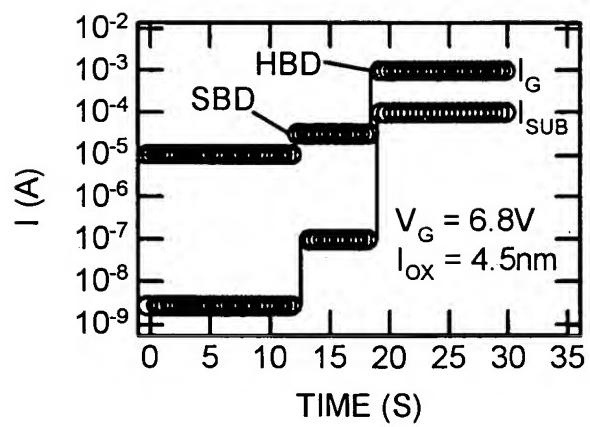


FIGURE 6

**FIGURE 7****FIGURE 8**

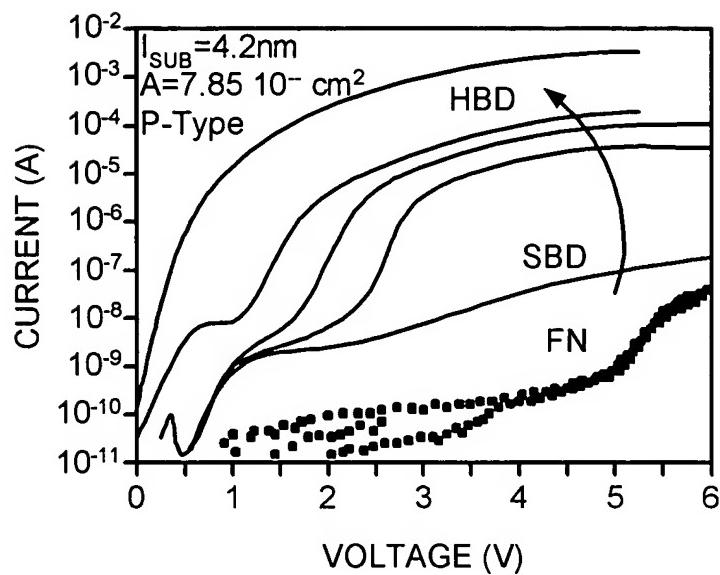


FIGURE 9

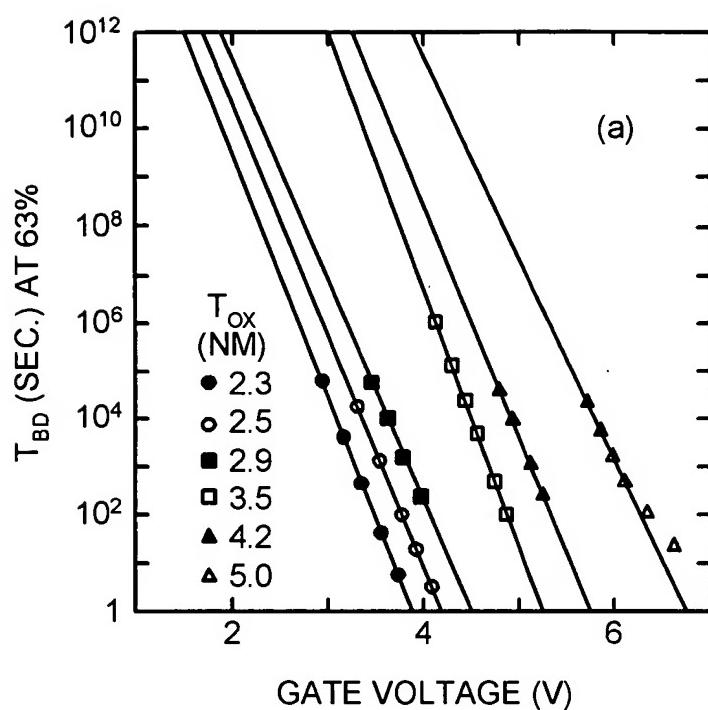
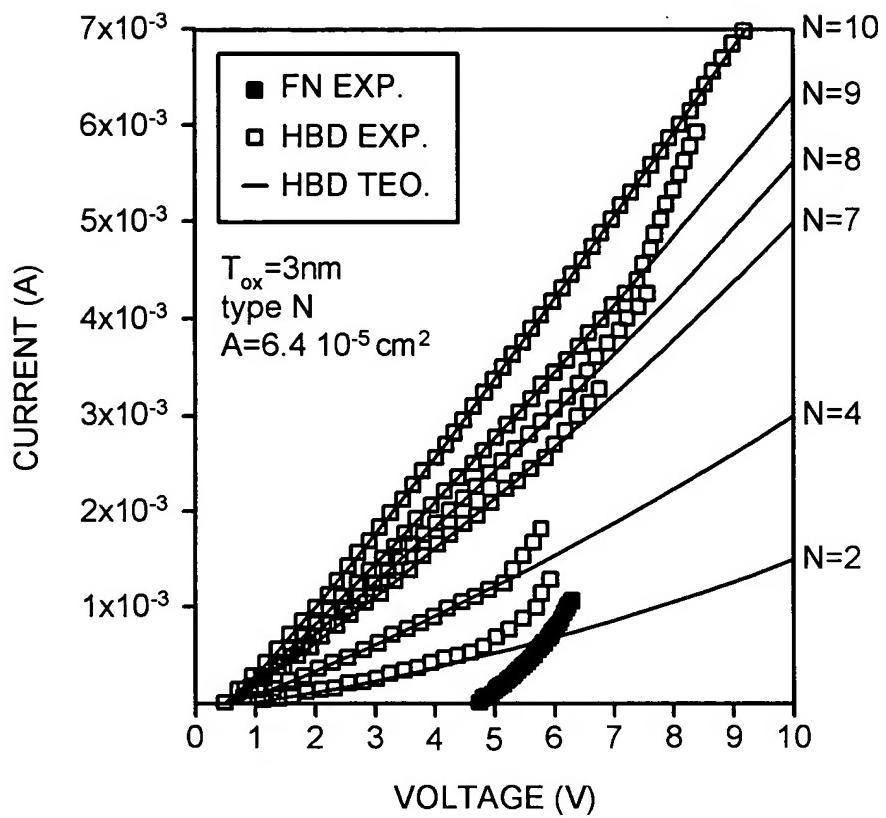


FIGURE 10

**FIGURE 11**

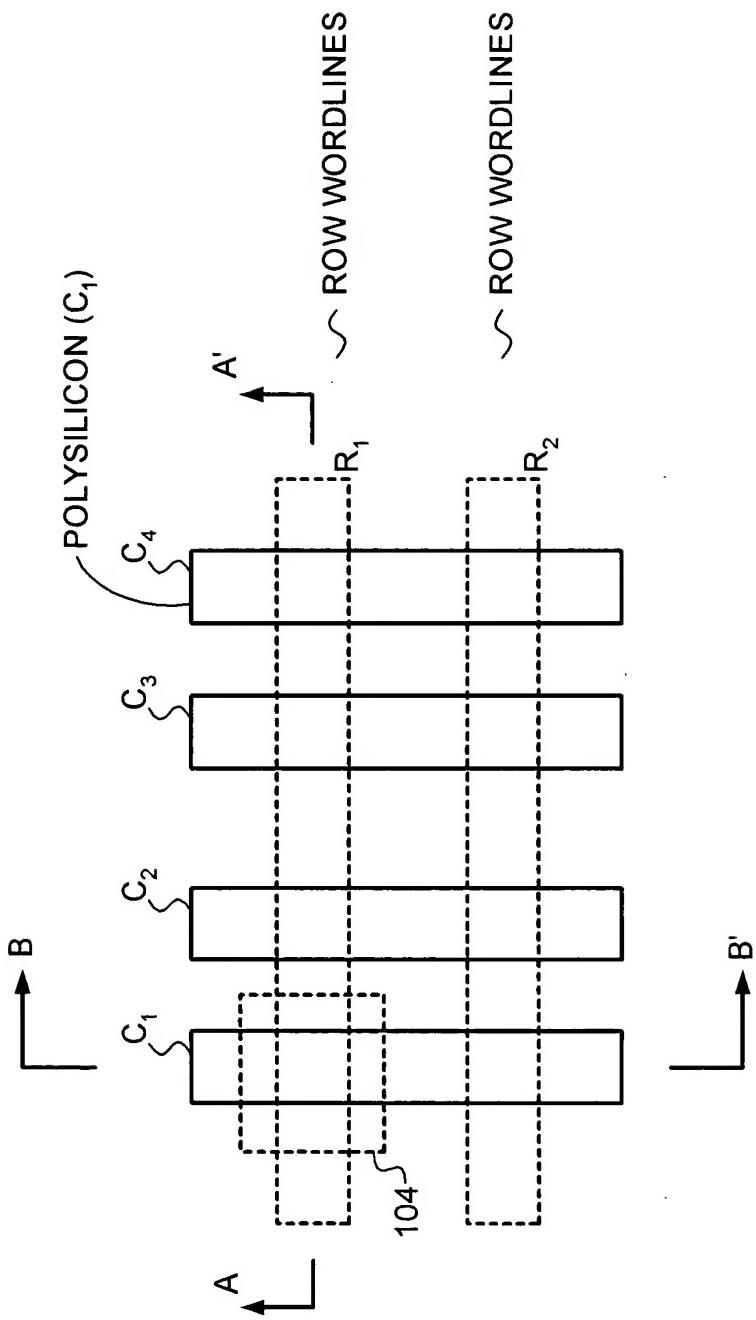


FIGURE 12

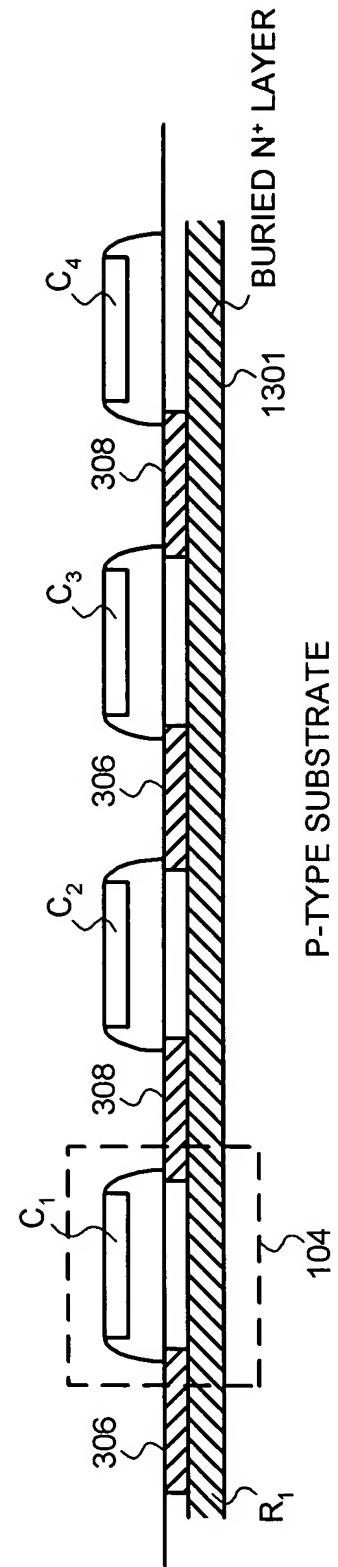


FIGURE 13

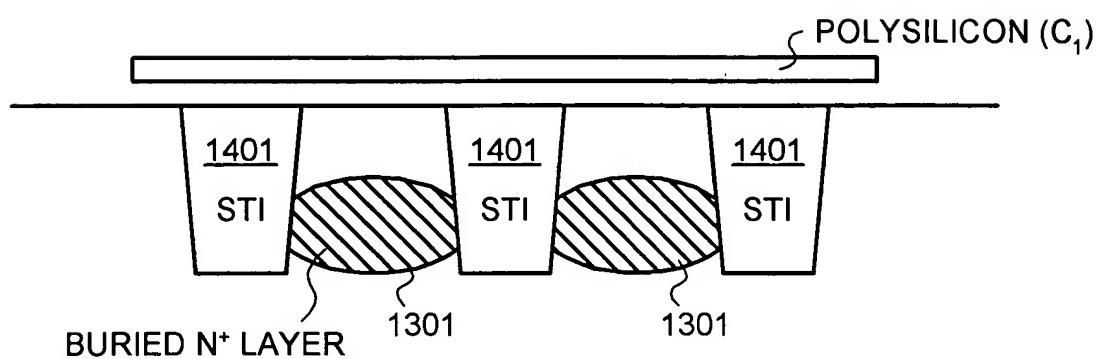


FIGURE 14

PROGRAM	SC/SR	VBL (V)	VWL (V)	PROGRAM
	SC/UR	V_{PP}	0	401
	UC/SR	V_{PP}	FLOATING	403
	UC/UR	< 0.5 V	0	405
	UC/UR	< 0.5 V	FLOATING	407
READ	SC/SR	$V_{DD} \text{ OR } V_{CC}$	0	409
	SC/UR	$V_{DD} \text{ OR } V_{CC}$	$V_{DD} \text{ OR } V_{CC}$	411
	UC/SR	0 OR FLOAT	0	413
	UC/UR	0 OR FLOAT	$V_{DD} \text{ OR } V_{CC}$	415

FIGURE 15

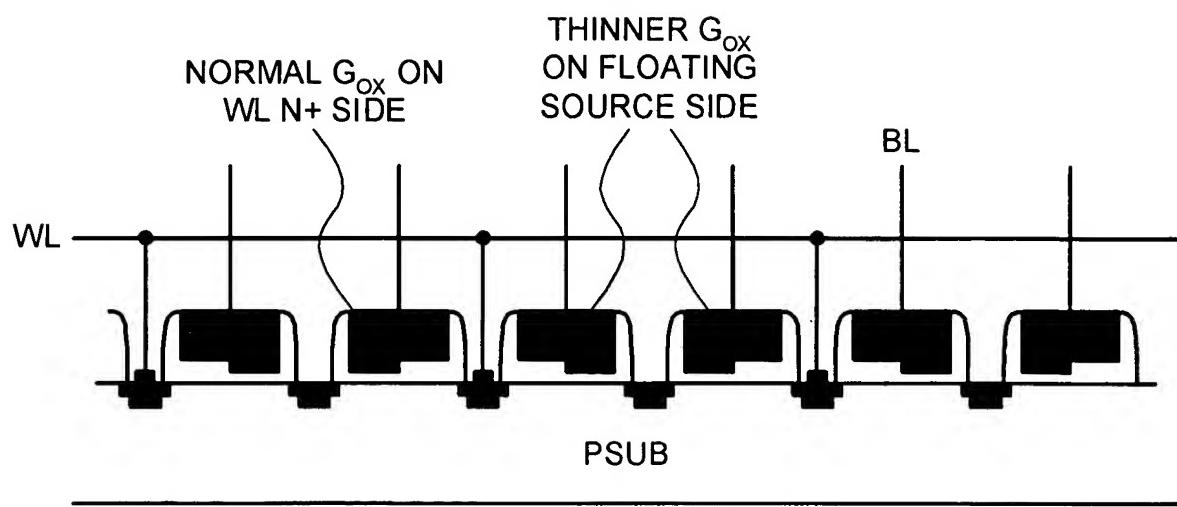


FIGURE 16

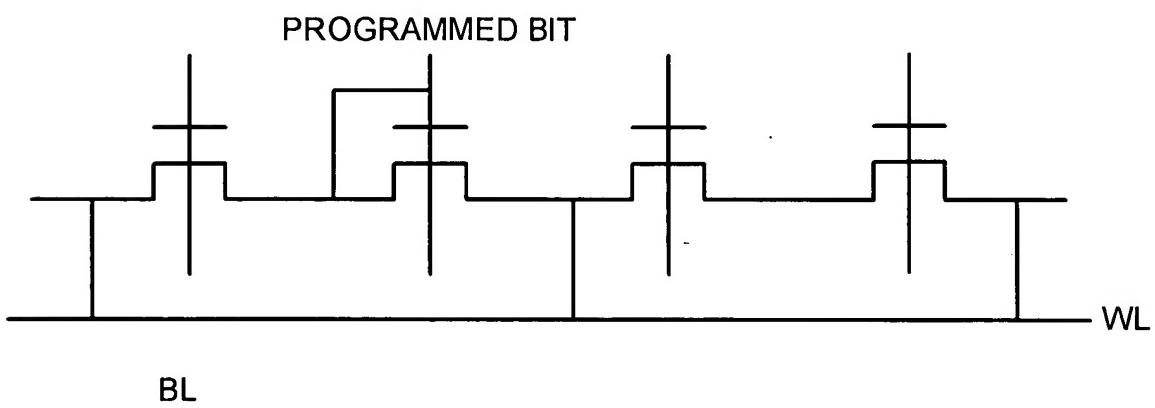


FIGURE 17

0.18um/0.13um XPM CX CELL OPERATION

PROGRAM	SB/SW	VBL (V)	VWL (V)	PROGRAM
	SB/SW	V_{PP}	0	YES
	SB/UW	V_{PP}	PC TO $V_{PP}/2$ AND FL	NO
	UB/SW	< 0.5 V	0	NO
	UB/UW	< 0.5 V	PC TO $V_{PP}/2$ AND FL	NO
I_{SENSE}				
READ	SB/SW	V_{DD} OR V_{CC}	0	YES
	SB/UW	V_{DD} OR V_{CC}	V_{DD} OR V_{CC}	NO
	UB/SW	0	0	NO
	UB/UW	0	V_{DD} OR V_{CC}	NO

$V_{PP} = 8\sim 9V$ FOR $G_{ox}=32A$ (0.18um) OR 5-7 FOR $G_{ox}=20A$, OR 3~4.5 V
 FOR 10-15A (5 TO 10A THINNER THAN NORMAL STANDARD GATE OXIDE).
 $V_{DD} =$ I/O VOLTAGE 3.3V OR 2.5V
 $V_{CC} = 1.8V$ FOR 0.18um AND 1.2V FOR 0.13um

FIGURE 18

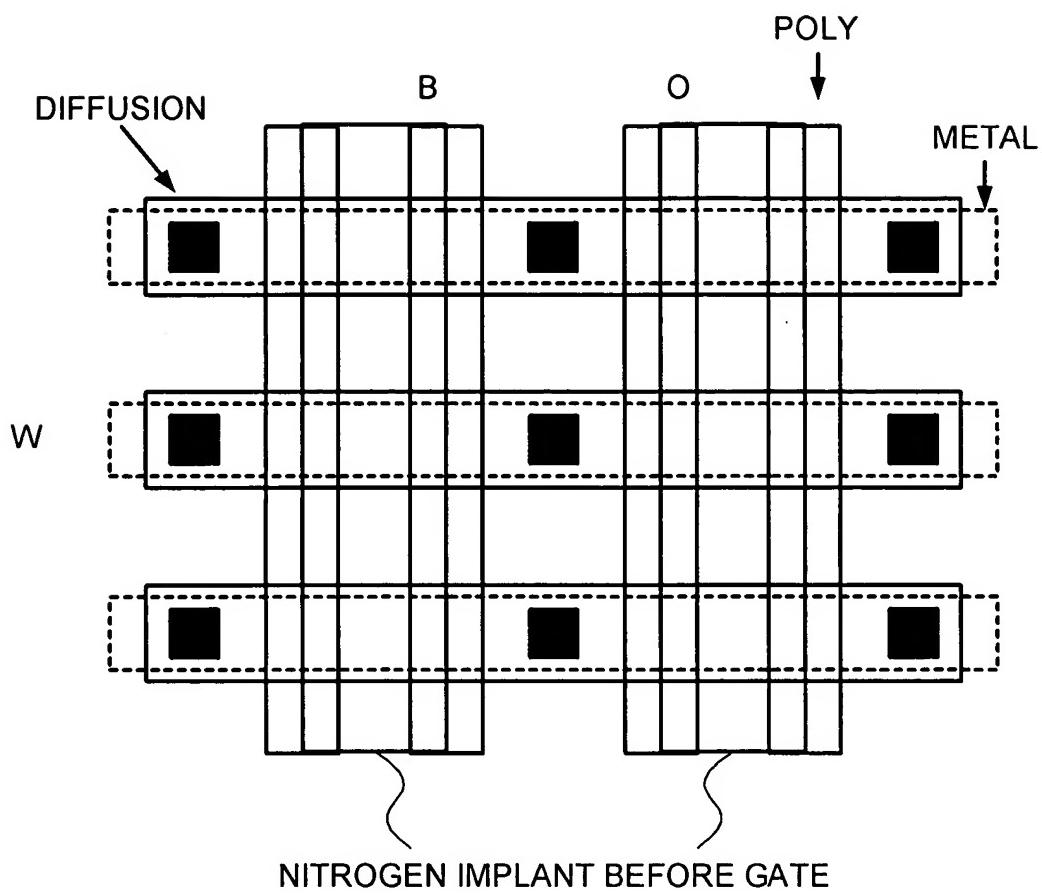


FIGURE 19

STEP 1:

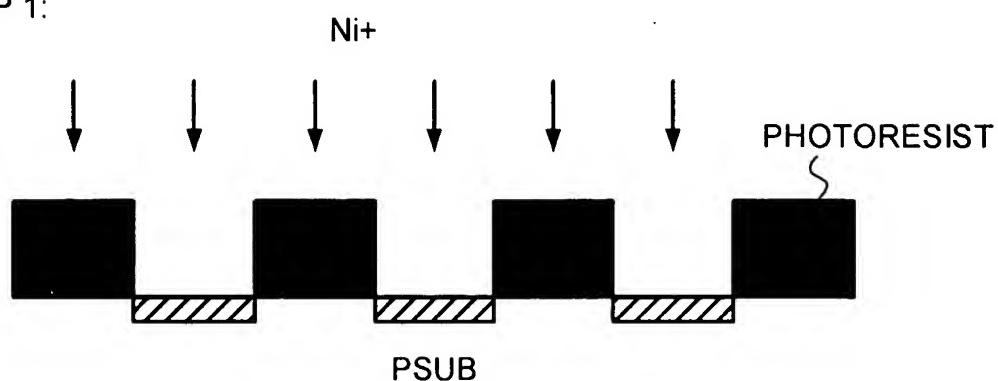


FIGURE 20

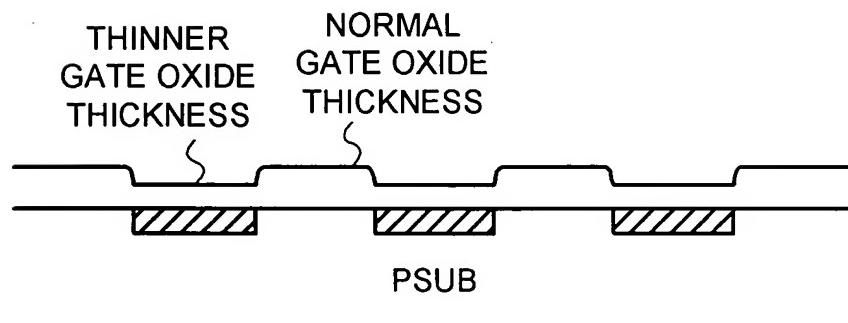


FIGURE 21

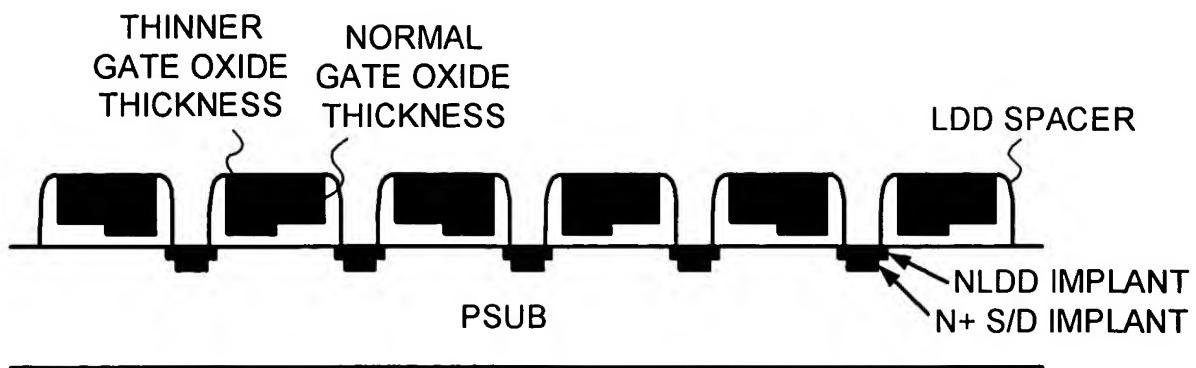


FIGURE 22

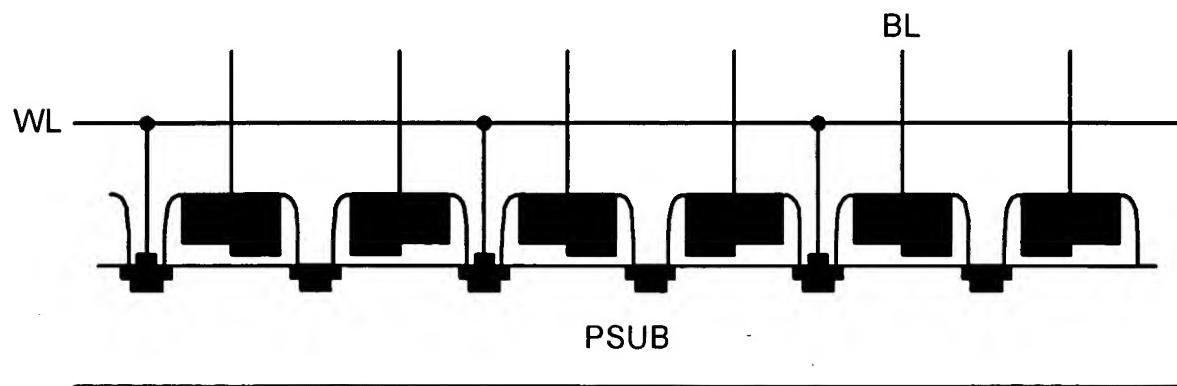


FIGURE 23

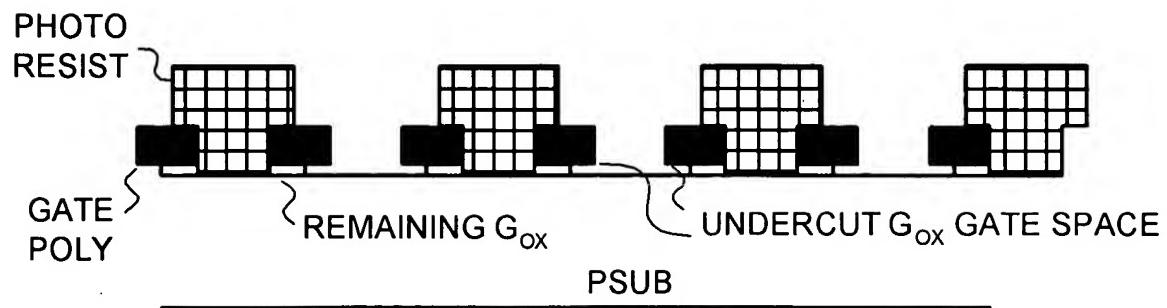


FIGURE 24

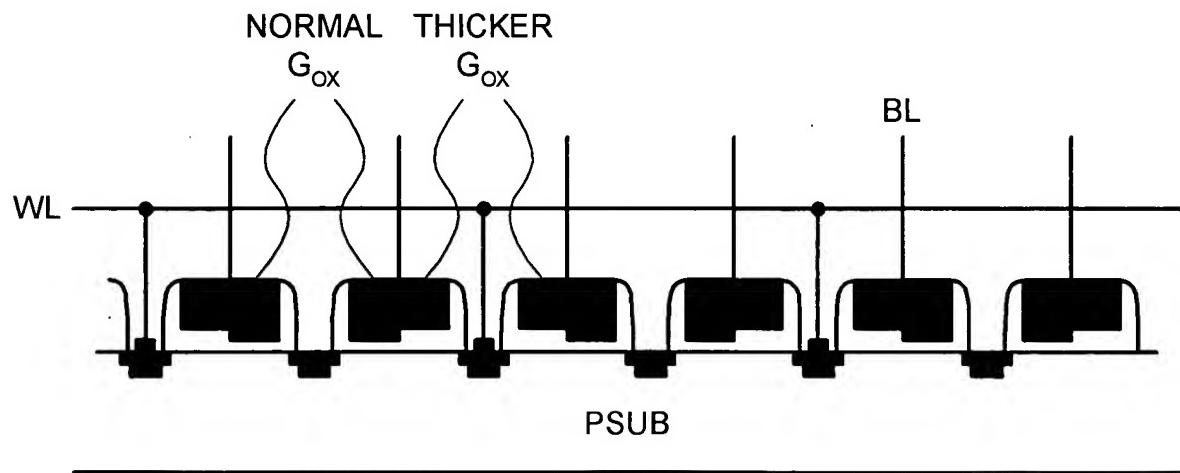


FIGURE 25

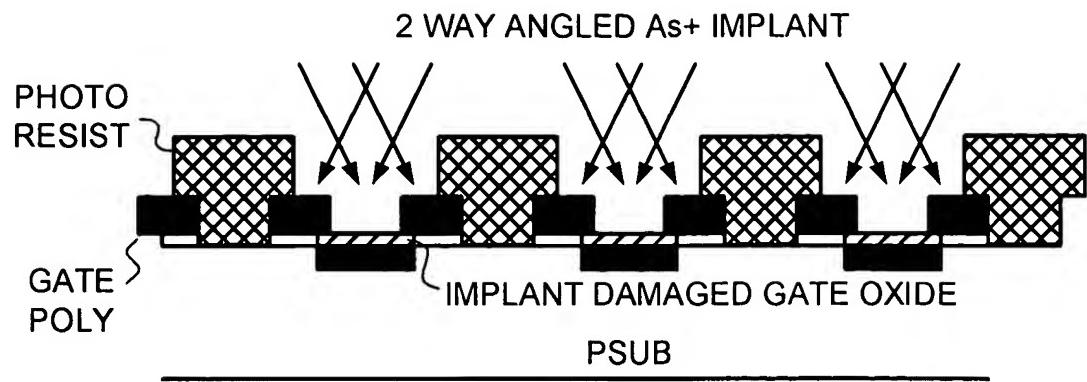


FIGURE 26

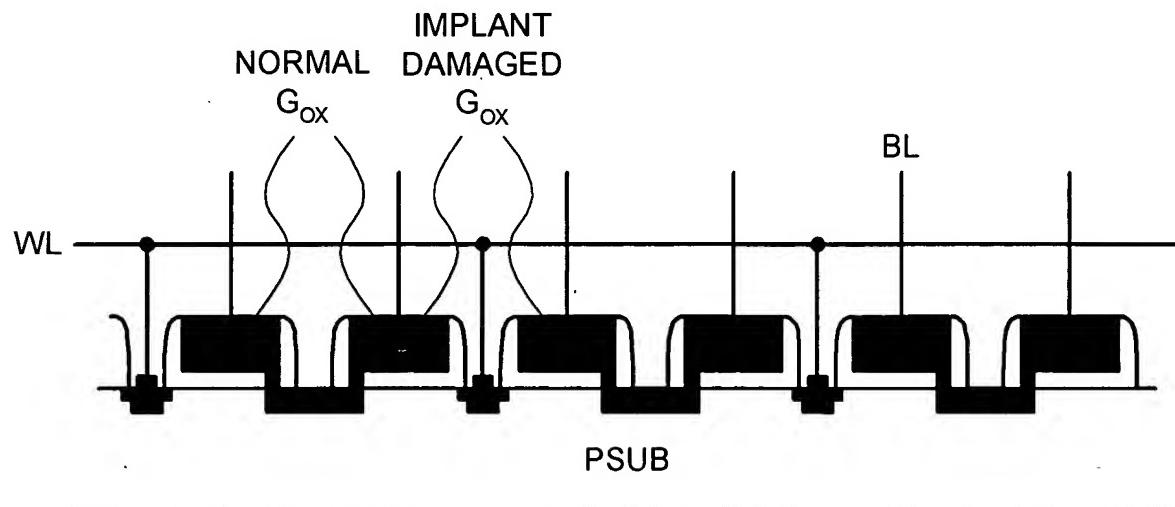
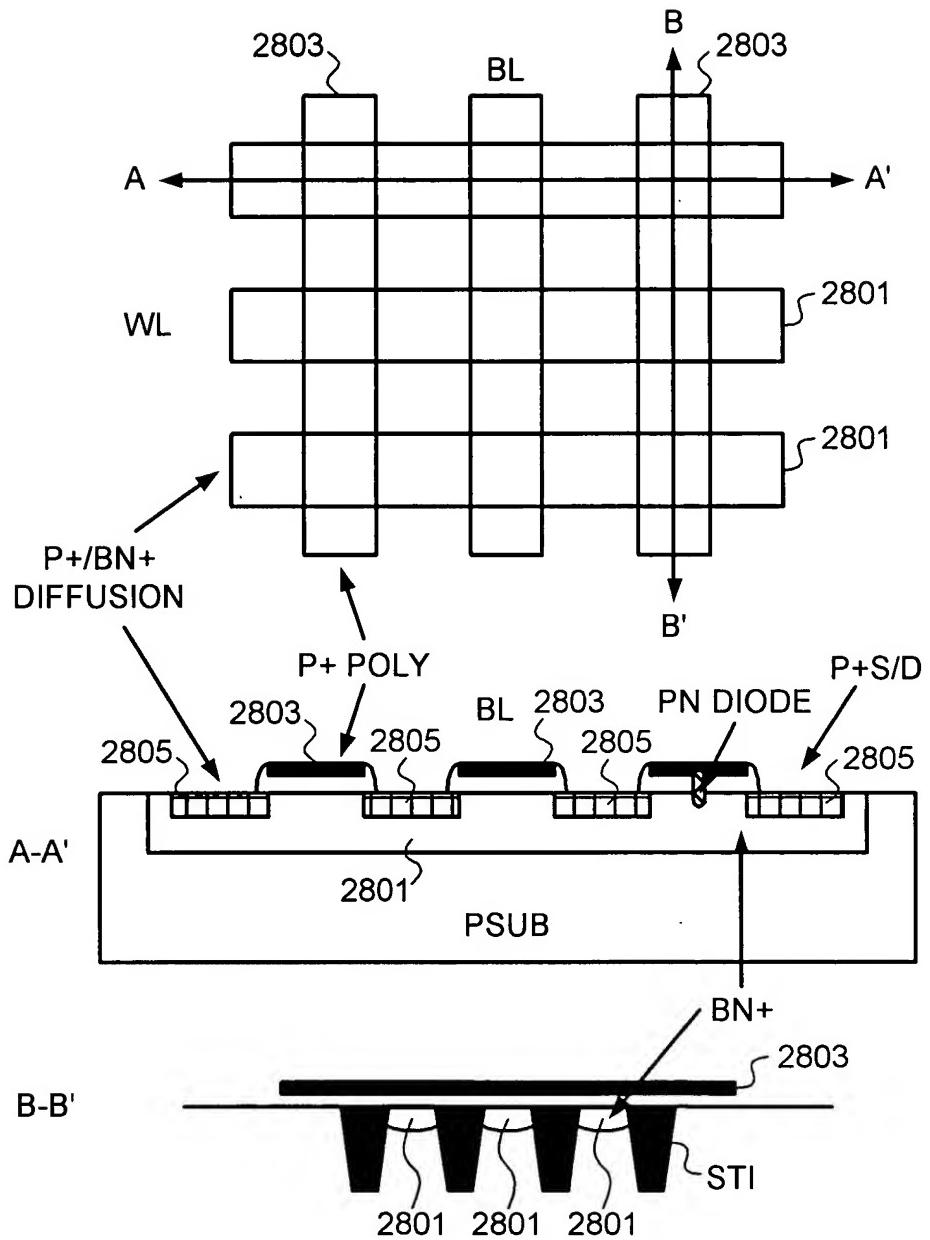


FIGURE 27

**FIGURE 28**

XPM P+POLY/BN+1T CELL OPERATION

PROGRAM	VBL (V)(P+POLY)	VWL (V)(BN+DIFFUSION)	PROGRAM
SC/SR	V_{BP}	V_{WP}	YES
SC/UR	V_{BP}	FLOATING	NO
UC/SR	< 0.5 V	V_{WP}	NO
UC/UR	< 0.5 V	FLOATING	NO
		I_{SENSE}	
READ	V_{RD}	0	YES
SC/UR	V_{RD}	V_{RD}	NO
UC/SR	0	0	NO
UC/UR	0	V_{RD}	NO

FIGURE 29

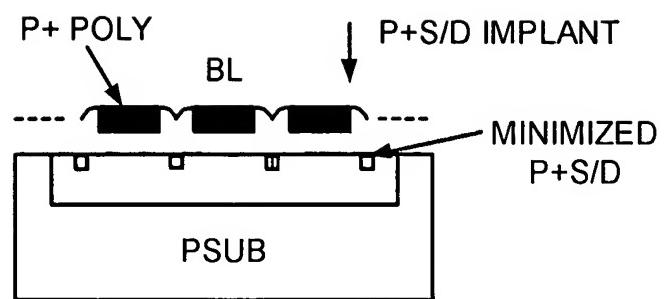
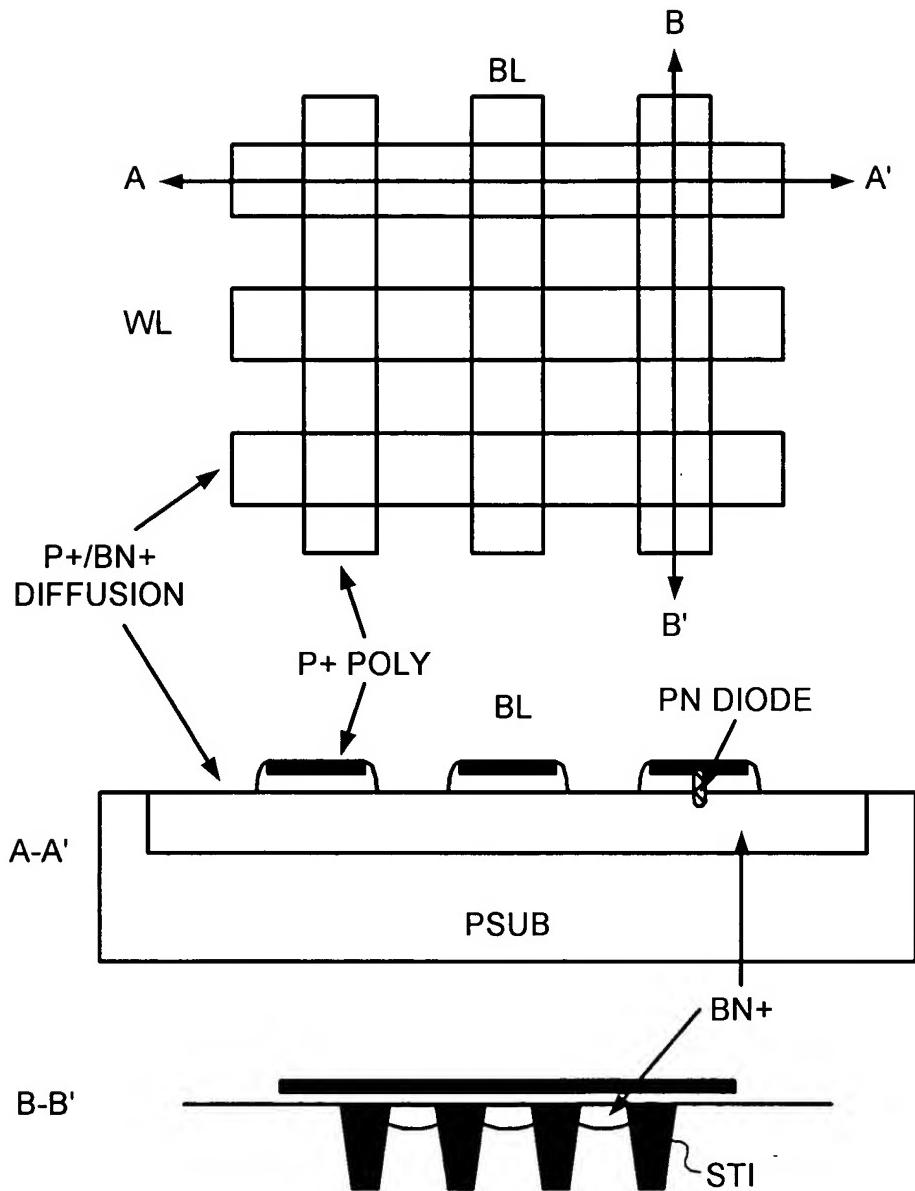
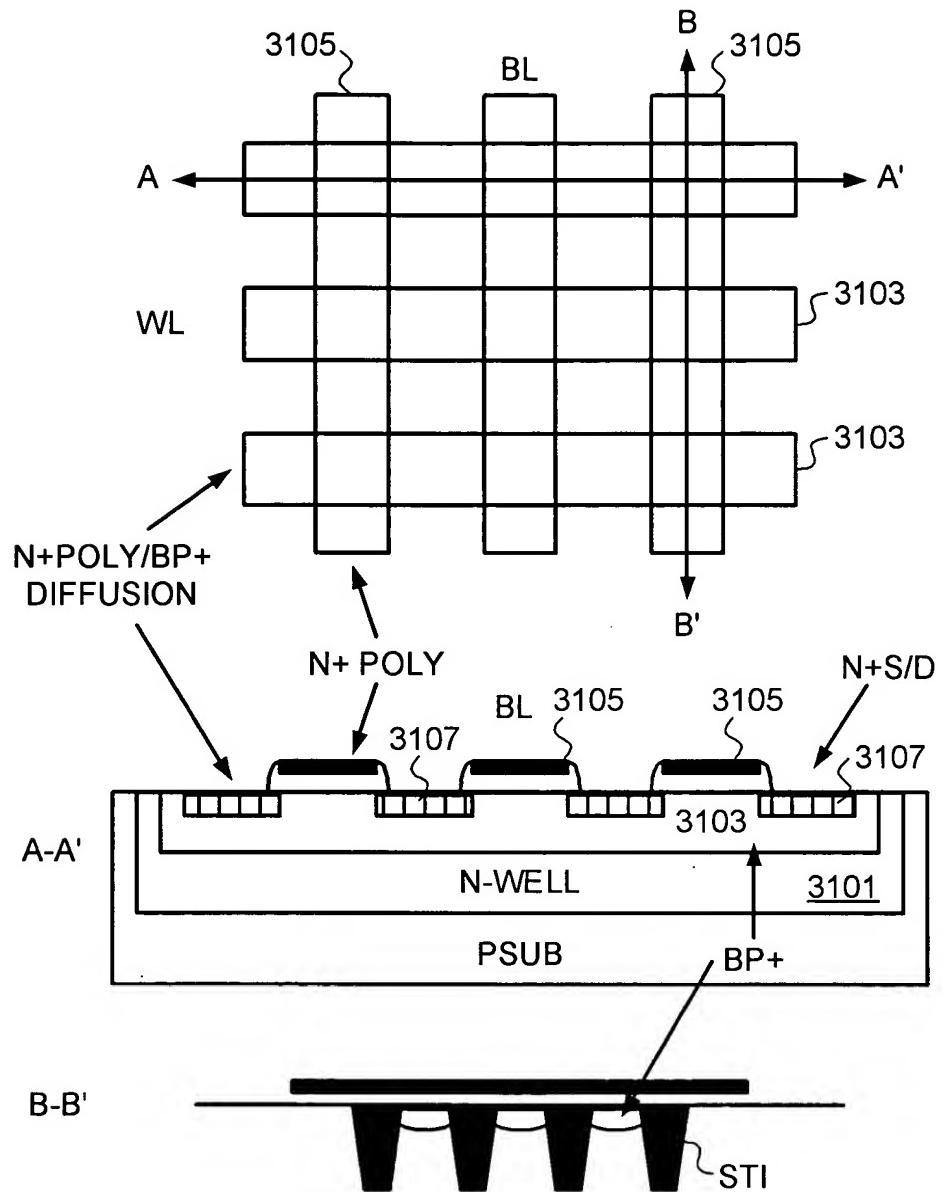


FIGURE 28A

**FIGURE 30**

**FIGURE 31**

XPM N+POLY/BP+ 1T CELL OPERATION

PROGRAM	VBL (V)(N+POLY)	VWL (V)(BP+)	N-	PROGRAM
SC/SR	V_{BP}	V_{WP}	V_{WP}	YES
SC/UR	V_{BP}	FLOATING	V_{WP}	NO
UC/SR	(0 ~ -)	V_{WP}	V_{WP}	NO
UC/UR	(0 ~ -)	FLOATING	V_{WP}	NO
			I_{SENSE}	
READ	0	V_{RD}	V_{DD} OR V_{RD}	YES
SC/UR	0	0	V_{DD} OR V_{RD}	NO
UC/SR	V_{RD}	V_{RD}	V_{DD} OR V_{RD}	NO
UC/UR	V_{RD}	0	V_{DD} OR V_{RD}	NO

FIGURE 32

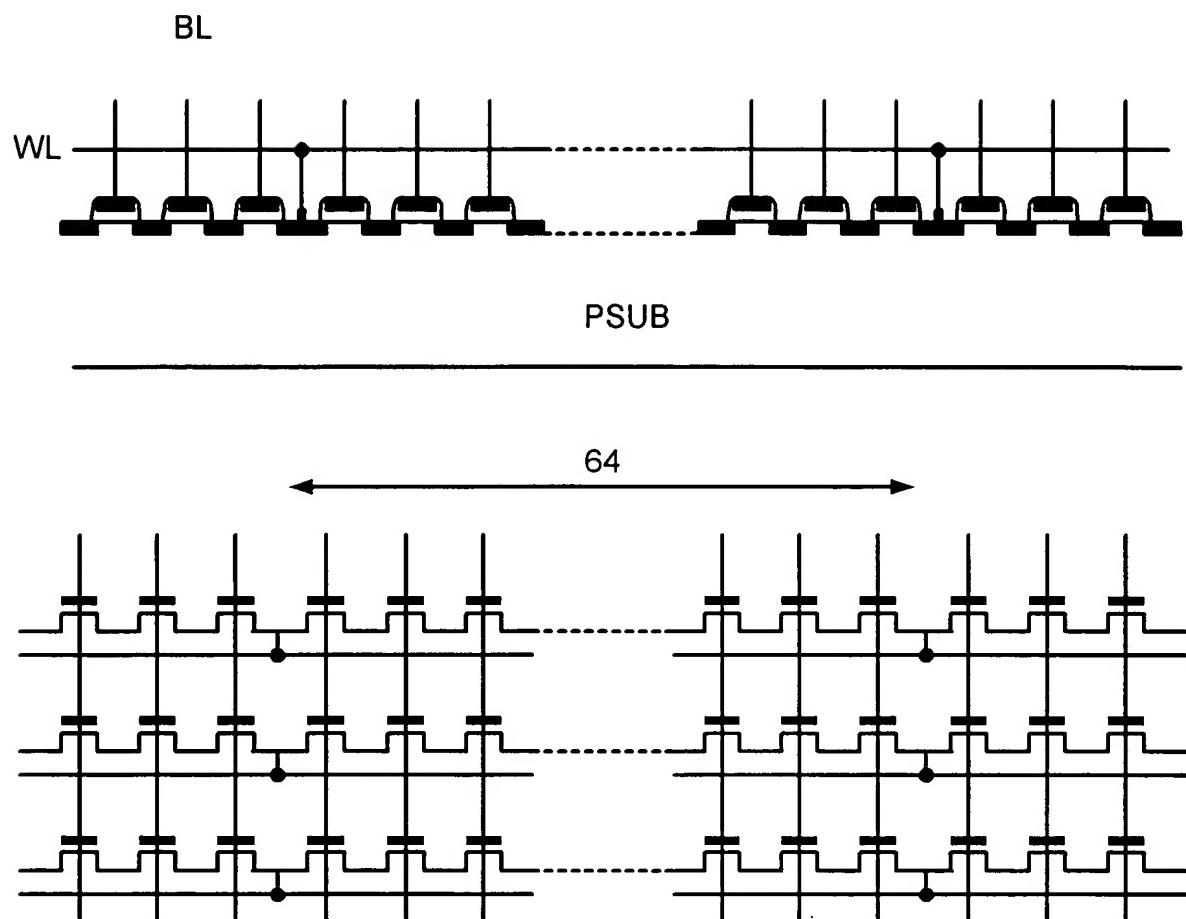


FIGURE 33